

**CLAIMS**

1. A waste paper fiber utilization system, comprising:  
a disintegration unit for disintegrating waste  
5 paper into fibers; and  
a recycling unit for recycling the fibers to new products,  
said disintegration unit for disintegrating waste  
paper into fiber using an amount of water such that  
10 capable of disintegrating waste paper into fibers and  
no waste liquid may be caused even when compressing the  
disintegrated fibers.
2. The waste paper fiber utilization system according  
15 to claim 1, wherein  
said disintegration unit disintegrates the waste  
paper at a yield of 100 percent using water such that  
a ratio in weight of waste paper to be disintegrated  
to water to be used is 1 to 0.6~1.0 when disintegrating  
20 the waste paper.
3. The waste paper fiber utilization system according  
to claim 1, wherein  
said recycling unit mixes the fibers with a  
25 predetermined additive to produce a substance with a

specific characteristic.

4. The waste paper fiber utilization system according to claim 3, wherein

5       the additive is one of plaster, rubber, paste, fillings, ceramic powder, carbon powder, a copper wire, an iron wire, cement, inorganic powder and zeolite or a combination of two or more of them.

10   5. The waste paper fiber utilization system according to claim 1, wherein

      said recycling unit colors the fibers in a predetermined color.

15   6. A waste paper disintegration device which disintegrates waste paper into fibers, comprising:

      a rotary feather provided with a plurality of feathers extending from its center;

      a storage unit provided inside the rotary feather,  
20   for storing the waste paper;

      a pouring unit for pouring an amount of water such that capable of disintegrating waste paper and no waste liquid may be caused even when compressing disintegrated fibers; and

25       a control unit for controlling rotation speed of

the rotary feather, based on a type, combination and weight of waste paper stored in the storage unit.

7. The waste paper disintegration device according to  
5 claim 6, wherein

said pouring unit for pouring water such that a ratio in weight of waste paper to be disintegrated to water to be used is 1 to 0.6~1.0 when disintegrating the waste paper.

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8. The waste paper disintegration device according to claim 6, wherein

said control unit for controlling a rotation time and the amount of water, based on a type, combination  
15 and weight of waste paper stored in the storage unit.

9. The waste paper disintegration device according to claim 6, wherein

a projection of a predetermined length is provided  
20 on the inner side of a cover provided for said storage unit.

10. The waste paper disintegration device according to claim 6, wherein

25 said storage unit is provided with a bowl-shaped

or conic member on the inner side of its cover.

11. The waste paper disintegration device according to claim 6, wherein

5       said storage unit is provided with one or more holes on its cover.

12. The waste paper disintegration device according to claim 10, wherein

10       a projection of a predetermined length is provided on the inner side of said bowl-shaped member or the conic member.

13. The waste paper disintegration device according to claim 6, wherein

15       said rotary feather is formed in such a way that a space of a predetermined size can be secured between the inside of said storage unit and the tip of a feather of said rotary feather.

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14. The waste paper disintegration device according to claim 6, wherein

      the plurality of feathers is formed in such a way as to be extended outward as they go away from the center  
25 of said rotary feather.

15. The waste paper disintegration device according to claim 6, wherein

said storage unit comprises two or more said  
5 rotary feathers.

16. The waste paper disintegration device according to claim 6, wherein

one or more rotary feathers are provided on the  
10 inside of a cover provided for said storage unit.

17. The waste paper disintegration device according to claim 6, wherein

one or more rotary feathers are provided on the  
15 inner side of said storage unit.

18. The waste paper disintegration device according to claim 6, further comprising

an observation unit which is provided for said  
20 storage unit and by which the inside of the storage unit can be observed from the outside.

19. The waste paper disintegration device according to claim 6, further comprising

25 an illumination unit for illuminating the inside

of said storage unit.

20. The waste paper disintegration device according to claim 6, wherein

5           said storage unit is inclined at a predetermined angle formed between a shaft connecting its center point of the base of the storage unit with its center point of the opening part of the storage unit and a shaft perpendicular to the ground.

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21. The waste paper disintegration device according to claim 6, wherein

          said storage unit is composed of a plurality of storage units, and of said plurality of storage units,  
15   a predetermined storage unit disintegrates waste paper into fibers and another storage unit further disintegrates the waste paper disintegrated by the predetermined storage unit into fibers.

20   22. A waste paper disintegration device which disintegrates waste paper into fibers, comprising;

          a storage unit whose side rotates at predetermined rotation speed, for storing the waste paper,

          one or more projection members provided on the  
25   inside of the storage unit;

a pouring unit for pouring an amount of water such that capable of disintegrating waste paper into fibers and no waste liquid may be caused even when compressing the disintegrated fibers, into the storage unit; and

5 a control unit for controlling the rotation speed of the side of the storage unit, based on a type, combination and weight of the waste paper to be stored in the storage unit.

10 23. A waste paper disintegration device which disintegrates waste paper into fibers, comprising;

a storage unit whose cover rotates at a predetermined rotation speed, for storing the waste paper,

15 one or more projection members provided on the inner inside of the cover of the storage unit;

a pouring unit for pouring an amount of water such that capable of disintegrating waste paper into fibers and no waste liquid may be caused even when compressing  
20 the disintegrated fibers, into the storage unit; and

a control unit for controlling the rotation speed of the cover of the storage unit, based on a type, combination and weight of the waste paper to be stored in the storage unit.

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24. A waste paper fiber utilization system, comprising;  
a terminal device installed for a user, which is  
the renter of a waste paper disintegration device for  
disintegrating waste paper into fibers;

5 a recycling unit for recycling the fibers to a  
product;

a monitor unit for monitoring the disintegration  
work of the waste paper in the waste paper disintegration  
device;

10 a management unit for receiving data indicating  
the monitored contents of the monitor unit from the  
monitor unit via a network and recording data; and

a transmitting unit for transmitting the  
monitored data recorded in the management unit to the  
15 terminal device via the network,

wherein

said waste paper disintegration device can  
disintegrate the waste paper into fibers, using an  
amount of water such that no waste liquid may be caused  
20 even when compressing the disintegrated fibers.

25. The waste paper disintegration device according to  
claim 6, wherein

said rotary feather comprises two feathers each  
25 of which extends in the same linear direction from its



center, and each of the two feathers comprises a collision plate which collides with the waste paper and crashes it on it [c1]when said rotary feather rotates.

5 26. The waste paper disintegration device according to claim 25, wherein

said collision plate is vertically provided on each of the two feathers, is disposed in the direction orthogonal to the linear direction and is also extended  
10 upward against the two feathers.

27. The waste paper disintegration device according to claim 25, wherein

said rotary feather is provided with a long and  
15 slender projection member in a position higher than the collision plate provided on each of the two feathers.

28. The waste paper disintegration device according to claim 6, wherein

20 said rotary feather rotates and also vertically shifts against said storage unit.

29. The waste paper disintegration device according to claim 6, wherein

25 a cover provided for said storage unit vertically

shifts against said storage unit while said rotary feather is rotating.

30. The waste paper disintegration device according to  
5 claim 6, further comprising;

a heating unit provided on the outer circumference of the storage unit, for generating heat with a predetermined temperature; and

an adjustment unit for adjusting the temperature  
10 of heat generated by the heating unit.

31. A waste paper disintegration device which disintegrates waste paper into fibers, comprising;

a supply unit for supplying the entire waste paper  
15 with a predetermined amount of water;

a first storage unit with a rotary feather for disintegrating waste paper containing the predetermined amount of water supplied by the supply unit, into fibers, for storing the waste paper;

20 a control unit for controlling a rotating operation of the rotary feather;

a second storage unit provided beneath or side by side the first storage unit, for storing the waste paper disintegrated by the rotary feather; and

25 a hole with a size such that the waste paper

disintegrated by the rotary feather can pass through it, provided on a wall for separating the first and second storage units from each other.

5 32. The waste paper disintegration device according to claim 31, wherein

said supply unit comprises

a first cylindrical member which touches on one surface of the waste paper, for feeding the waste  
10 paper to said first storage when rotating in a predetermined direction; and

a second cylindrical member which touches on the other surface of the waste paper, for feeding the waste paper to the first storage unit when rotating  
15 in the direction the reversal of the rotating direction of the first cylindrical member, and

supplies at least one of the first and second cylindrical members with the predetermined amount of water.

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33. The waste paper disintegration device according to claim 32, wherein

said supply unit supplies both said first and second cylindrical members with the predetermined  
25 amount of water.

34. The Waste paper disintegration device according to claim 31, further comprising

an opening/closing unit provided on a wall for  
5 separating said first and second storage units from each other, for opening/closing said hole.

35. The Waste paper disintegration device according to claim 31, further comprising

10 a third storage unit for storing a plurality of pieces of waste paper before disintegration; and

a feeding unit for feeding the waste paper from the third storage unit to the supply unit at predetermined time intervals.

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36. The Waste paper disintegration device according to claim 31, wherein

said supply unit comprises

a first cylindrical member which touches on  
20 one surface of the waste paper, for feeding the waste paper to said first storage when rotating in a predetermined direction; and

a second cylindrical member which touches on the other surface of the waste paper, for feeding  
25 the waste paper to the first storage unit when rotating

in the direction the reversal of the rotating direction  
of the first cylindrical member, and

a spraying unit for producing fog from the  
predetermined amount of water and spray it on the waste  
5 paper fed by the first and second cylindrical members.

37. The waste paper disintegration device according to  
claim 31, wherein

said first storage unit is inclined at a  
10 predetermined angle.

38. The waste paper disintegration device according to  
claim 31, wherein

said rotary feather is provided on the side of said  
15 first storage unit.

39. The waste paper disintegration device according to  
claim 32, 33 or 36, wherein

a plurality of circular blades is provided on the  
20 side of said first cylindrical member at equal intervals,  
and

a plurality of grooves corresponding to the  
plurality of circular blades is provided on the side  
of said second cylindrical member.

40. The waste paper disintegration device according to claim 32, 33 or 36, wherein

a plurality of convex parts is provided on the side of said first cylindrical member at equal intervals,  
5 and

a plurality of concave parts corresponding to the plurality of convex parts is provided on the side of said second cylindrical member.

10 41. The waste paper disintegration device according to one of claims 31 through 40, wherein

Said control unit controls a rotating operation of said plurality of rotary feather provided on the same shaft.

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42. The waste paper disintegration device according to one of claims 31 though 41, wherein

said supply unit further comprises

a third cylindrical member which touched on  
20 one surface of the waste paper, for feeding the waste paper to said first storage unit when rotating in a predetermined direction; and

a clumping plate for clumping the other surface of the waste paper, and

25 a plurality of spike-shaped members is

provided on the side of said third cylindrical member.

43. The waste paper disintegration device according to one of claims 31 through 41, wherein

5           one or more projections is provided on the inner side of said first storage unit.

44. The waste paper disintegration device according to one of claims 31 through 41, wherein

10           a spiral groove is provided on the inner side of said first storage unit.

45. The waste paper disintegration device according to one of claims 31 through 41, wherein

15           a plurality of grooves is vertically or horizontally provided on the inner side of said first storage unit.

46. The waste paper disintegration device according to claim 15, wherein

20           said storage unit comprises a pole member with a side along each rotation orbit of two or more said rotary feathers.

25   47. The waste paper disintegration device according to

claim 6, wherein

a cylindrical member is provided on the rotation shaft of said rotary feather, and

a bar member is provided on the side of said  
5 cylindrical member.

48. The waste paper disintegration device according to claim 6, wherein

a cylindrical member is provided on the rotation  
10 shaft of said rotary feather, and

a string member is provided on the side of said cylindrical member.

49. The waste paper fiber utilization system according  
15 to claim 1, wherein

said recycling unit puts the fibers in a cylinder or a half-cylinder formed in a predetermined shape, and the fibers are used as culture soil in vertical afforestation, hanging afforestation and other  
20 afforestation.

50. The waste paper fiber utilization system according to claim 1, wherein

said recycling unit produces flame-resistant  
25 fibers by mixing the fibers with boron, a flame-proof



material, a flame-resistant material or another material, fills the flame-resistant fibers in a flame-resistant box, bag or another container and produces a heat insulating material.

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51. The waste paper fiber utilization system according to claim 1, wherein

said recycling unit makes the fibers contain water or liquid fertilizer and produces culture soil as a  
10 needle-point flower holder for arranging flowers.

52. A waste paper fiber utilization system, comprising:

a disintegration unit for disintegrating the waste paper into fibers using an amount of water such  
15 that capable of disintegrating waste paper into fibers and no waste liquid may be caused even when compressing disintegrated fibers;

a recycling unit for recycling the fibers to a product according to an instruction of a user;

20 a monitor unit for monitoring and recording the waste paper disintegration process by a disintegration unit and the production process of a recycled product produced by the recycling unit; and

a transmitting unit for transmitting monitored  
25 contents recorded by the monitor unit to a terminal

device provided for a user via a network.